LS-85
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(No Distribution -
For Reference Only)

POSSIBLE LAYOUT FOR A 1.048 km CIRCUMFERENCE, THREE-MAGNET-PER-SECTOR, 7-GeV STORAGE RING

(For cost comparison only)

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Possible Layout for a 1.048 km Circumference, Three-Magnet per-Sector, 7 GeV Storage Ring

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The ring has 28 normal cells (32 m) with 6-meter insertion regions and 4 longer cells (38 m) with 12-meter insertion regions. It contains 3 quadrupoles at both ends of the insertion region and 8 quadrupoles in the dispersion region. The cell length parameters are shown in Table I. A possible set of lattice parameters are shown in Figs. 1 and 2.

This note is written for the purpose of cost comparison with the 800-m CDR ring. The final design of a lattice for this configuration may have a somewhat different circumference with different focusing element spacings and lengths. The magnet lengths (2 m) will probably remain unchanged. (B = 0.764 T at 7 GeV)

Table I

D = Drift Q = Quadrupole M = Bend Magnet S = Sextupole

Bending radius of each magnet is $\frac{2 \times 96}{2\pi} = 30.558$ m.

Element	Length (M)	
M/2	1.0	
D	0.25	
S	0.50	
D	0.25	
Q	0.50	
D	0.50	
Q	0.50	6 m
D	0.25	
S	0.50	
D	0.25	
Q	0.50	
D	0.50	
Q	0.50	
D	0.25	
S	0.50	
D	0.25	
M	2.00	
D	0.60	
Q	0.60	
D	0.60	7 m*
Q	1.00	
D	0.60	
Q	0.60	
D	3.00†	

Reflect

*10 m for long insertion cells

†6.00 m for long insertion cells

There are 28 32-m cells and 4 38-m cells. The circumference is 1048 m.

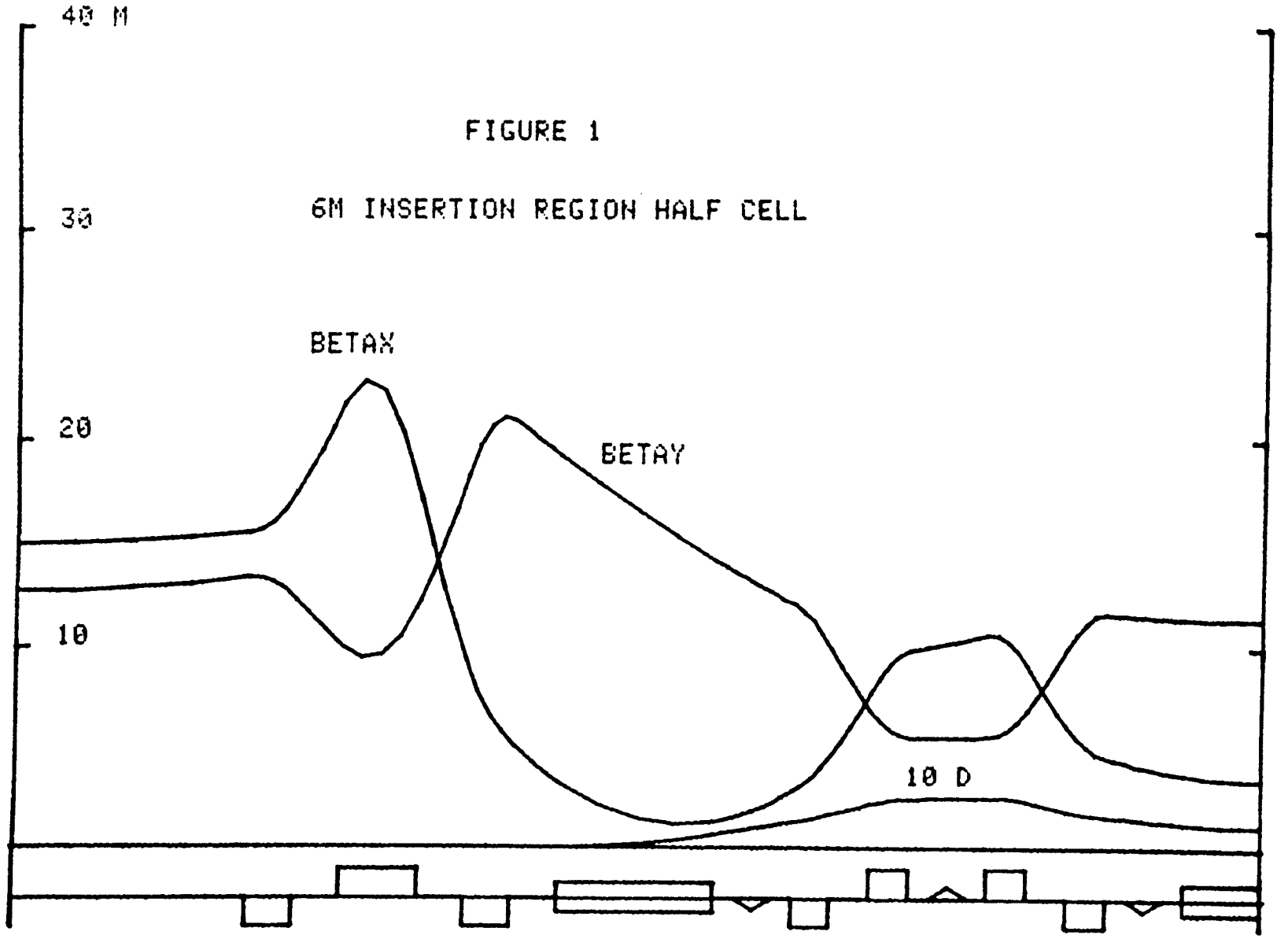

FIGURE 1

6M INSERTION REGION HALF CELL

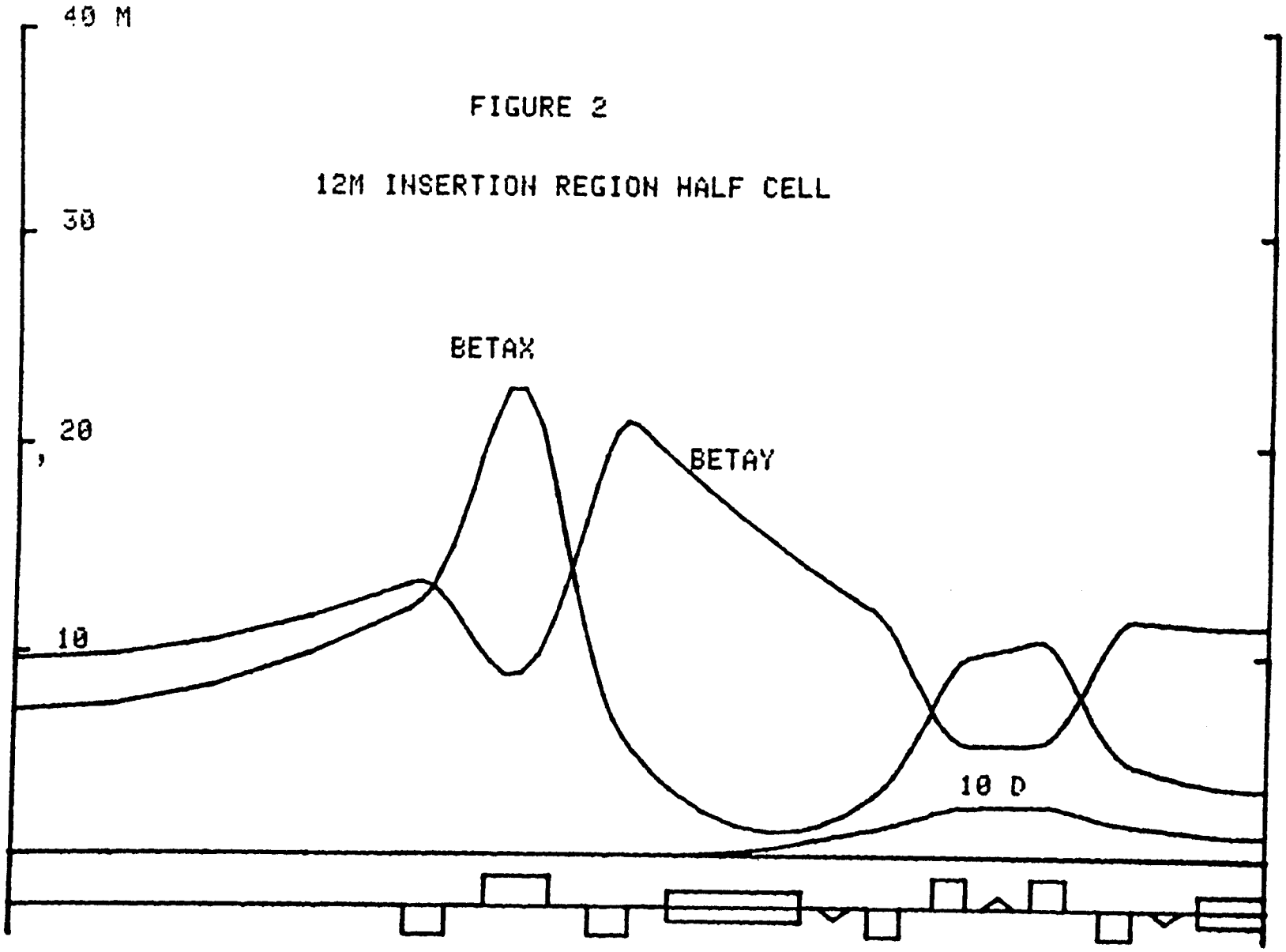

FIGURE 2

12M INSERTION REGION HALF CELL